OhioEPA
Ohio Environmental Protection Agency
Division of Surface Water

Biosolids Agronomic Rate Calculation Worksheet

General Information

Ohio EPA #	59-00141	
Field ID #	MOS-14-01	
Generator Name	Emerald BioEnergy	

Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	43400.00	mg/kg
Total Kjeldahl Nitrogen	87600.00	mg/kg
Total Phosphorus	23900.00	mg/kg
Organic Nitrogen	86.40	lbs/ton
Available Nitrogen	113.32	lbs/ton
Phosphate (P_2O_5)	54.73	lbs/ton
Will Immediate Incorporation / Injection be performed?	Yes	

Beneficial Use Site Information

Soil Phosphorus	49.50	ppm	Mehlich 3		
	43.56	ppm			
Please note that the agronomic rates and phosphorus index have been calculated within the *Calculated Agronomic Rates* section; however, based upon the above provided *Soil Phosphorus* result, you must utilize the most limiting factor or the *Phosphorus Index*:	The Nitrogen Agronomic Rate, the Multi-Year Phosphate Agronomic Rate, or the Phosphorus Index.				
County	Morrow				
Soil Type	Pewamo silty clay loam				
Hydrologic Soil Group	C				

Year 1	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	180				
Year 2	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	50				
Year 3	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Year 4	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Year 5	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					

Crop Nitrogen Requirements (Year 1)	215	lbs/acre
Existing Available Nitrogen		lbs/acre
Non-Biosolids Nitrogen Application		lbs/acre
Phosphate (P_2O_5) Fertilizer Application		lbs/acre
Non-Biosolids Organic Phosphate (P_2O_5) Application		lbs/acre
Biosolids Phosphate (P_2O_5) Beneficial Use	103.84	lbs/acre
Total Organic Phosphate (P_2O_5) Fertilizer Application	103.84	lbs/acre

Phosphorus Index

		Subvalue
Soil Loss	5 tons/acre/year	5
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is not adjacent to an intermittent or perenial stream.	0
Runoff Class - Slope Range	1-3%	4
Soil Phosphorus		3.05
Application - Phosphate (P_2O_5) Fertilizer		0
Method - Phosphate (P_2O_5) Fertilizer	None applied.	0
Application - Organic Phosphate (P_2O_5) Fertilizer		6.23
Method - Organic Phosphate (P_2O_5) Fertilizer	Immediate incorporation or applied on ≥80% cover.	0.5
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No	0
Total Phosphorus Index		**18.78**

Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.90	dry tons/acre
i. Calculated Agronomic Rate	1.90	dry tons/acre
Single Year Phosphate Agronomic Rate	1.32	dry tons/acre
Multi-Year Phosphate Agronomic Rate	2.05	dry tons/acre
Phosphorus Index	Medium potential for phosphorus runoff. Use the Nitrogen Agronomic Rate.	

Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	221.95	dry tons			
Phosphate (P_2O_5) Beneficially Used Per Acre	240.31	lbs/acre			
Acreage	101.1				
Date Biosolids Delivered to Beneficial Use Site	12/8/2018				
Dates of Beneficial Use	12/8/2018	to	12/11/2018		
Total Days Biosolids Stored at Beneficial Use Site	0.00	Days			
Date Signage Posted at Beneficial Use Site	12/1/2018		☐ Yes	Is a permanent sign posted at the beneficial use site?	
Date Signage Removed from Beneficial Use Site	12/18/2018		☑ No		